

CHERKES. L.A.

Pathologic processes as the result of correlation disorders between  
protein-and vitamin metabolism. Klin.med., Moskva 29 no.2:12-21 Feb  
51. (CLML 20:7)

1. Moscow.

CHERKES, L.A.

[Choline as a nutritive factor and the pathology of choline metabolism]  
Kholin, kak pishchevoi faktor, i patologiya kholinovogo obmena. Moskva,  
Izd-vo Akademii med.nauk SSSR, 1953. 183 p.  
(MLR 6:8)  
(Choline)

1. CHERKES, L. A.
2. USSR (600)
4. Toxins and Antitoxins
7. Factor "Z" and proteinogenous toxicosis, Vop. pit., 12, No. 2, 1953.

The development of the toxicosis due to an excessive protein content in the food can be stopped by feeding yeast or the Z factor of yeast to exptl animals. Factor Z, which is thermally stable, dissolves in water or dil alc. It is apparently a hitherto unknown vitamin of the B group. The protein-caused toxicosis produces patho changes in the liver (dilation of small veins of the portal system, hemorrhages, sometimes necroses).

256T58

(CA 47 no.22: 12547 '53)

Inst. Vitamino, Acad. Med. Sci., USSR, Moscow

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

CHERKES, Leon Abramovich [author]; LEYTES, S.M., professor [reviewer].

"Choline as a nutritive factor and the pathology of choline metabolism."  
L.A.Cherkes. Reviewed by S.M.Leytes. Klin.med. 31 no.9:91-93 S '53.  
(MLRA 6:11)  
(Choline) (Cherkes, Leon Abramovich, 1890- )

USSR/Medicine - Nutrition

FD-3304

*G H A N D* Pub. 141 - 19/19  
Card 1/1

Author : Professor L. A. Cherkes

Title : Sergey Isayevic Vinokurov [necrology]

Periodical : Vop. pit., 61-62, Jul/Aug 1955

Abstract : Outlines highlights in the life S. I. Vinokurov, former head of Chair of Biochemistry, Kiev Medical Institute, who died 2 March 1955 at the age of 56. No references.

Institution :

Submitted :

CHERKES, L.A., professor

"Physiology and pathology of fatty tissue". S.M. Leites. Reviewed  
by L.A. Cherkes. Arkh. pat. 17 no.4:85-86 O-D '55. (MLRA 9:2)

(ADIPOSE TISSUES) (LITES, S.M.)

CHERKES, L. A.

USSRA

The metabolic relation between nicotinic acid and sulfur-containing amino acids. L. A. Cherkas, N. M. Fil'chakov and A. A. Kostylev. *Zhurn. Akad. Med. Nauk U.S.S.R., Moscow*, *Bioхimия*, 20, (4), 619-635. White male rats of 70-90 g. were fed the following diet: casein 9 or 18% (when 0%, diet was supplemented with sugar), starch 23%, sugar 25%, lard 20%, salt mixt. (cf. Rubbel, C.A. 31, 7046) with 4% Co. Animals were given this diet ad libitum, and received in addn. daily brewers' yeast 0.75 g., vitamin A 20 I.U., vitamin D 8 I.U., and every 7th day were given 1-2 mg. vitamin E. Two series of expts. were conducted, to show the effects of diets high and low in cystine. With a diet of 18% casein (10 mice) as well as with one of 9.0% casein (20 mice) the addn. of 60-80 mg. L-cysteine per day (expts. extended over 100 days) the changes occurring in the liver and kidney were similar to those reported heretofore, being more pronounced in the mice receiving the 9% casein diet. In the second series a study was made of the effect of pyridoxine and of nicotinic acid on changes induced by a diet with a high cystine content. In this series test animals were divided into 8 groups of 10 rats each. Animals of group A received a diet of 9% protein plus cystine; group B, 2 mg. of nicotinic acid in addn.; group C, an addn. 150 γ of pyridoxine. All work was done twice at different seasons of the year and extended over 200 days. Inclusion in the diet of nicotinic acid alleviated to a considerable degree the development of pathologic manifestations caused by the excess of cystine in the exptl. diet. The inclusion in the diet of an excessive amt. of S-contg. amino acids lowers the content of methylnicotinamide in the urine. No connection was established between this and the possible disturbance in the organism's endogenous nicotinic acid synthesis from tryptophan nor with any deficiency in active methyl groups. B. S. Leyne

Sols. experimental  
Pathology

CHERKES A

The role played by sulfur-containing amino acids in the effect proteins of the ration on the metabolism of nicotinic acid. L. A. Cherkas and N. M. Fil'chagin (Acad. Med. Sci. U.S.S.R., Moscow). *Biokhimiya* 21, 64-70 (1956).  
Rats weighing 140-160 g. were fed a special diet containing corn starch 23%, sugar 33%, lard 20%, and Johnson and Foster salt mixture to which was added NaF and alum 4% and casein 20%. When the casein was reduced to 9%, the remainder was replaced by a proportional quantity of starch. The B vitamins were supplied in the form of dry yeast (0.75 g./day); this contained approximately 0.4 mg. of nicotinic acid. Rats also received vitamin A (20 units), vitamin D (8 units), and 1-2 mg. of vitamin E once weekly.  
Intake of food and of H<sub>2</sub>O was *ad libitum*. Animals were kept in individual cages provided with false bottoms. Some of the rats in addition to casein were given daily 58.3 mg. of D<sub>2</sub>-methionine (I) and 6 mg. of L-cystine (II) as the casein was being gradually reduced to 9%. Quantitative determinations for N'-methyl-nicotinamide (III) were made in the urine. The reduction in the casein content of the diet resulted in the increased urinary output of III. This was regarded as due to a lowering in the content of I and II in the diet. When I and II were supplemented for the reduced casein in the diet no increased excretion of III via the urine was observed. Nicotinic acid takes part in the metabolism of S-containing amino acids. The quantitative relation between S-containing amino acids, tryptophan, and nicotinic acid in the diet determines largely the fate of the nicotinic acid in the organism.

B. S. Levine

2

CHERKES, L.A. (Moskva)

Pathological conditions resulting from a disproportion between vitamins and other nutritional components. Vopr.pit. 17 no.1:3-12 Ja-F '58.  
(MIRA 11:4)

1. Iz laboratorii patologicheskoy fiziologii Instituta pitaniya  
AMN SSSR, Moskva.

(VITAMINS,

nutritional disproportions with other components,  
pathol. results, review (Rus))

(NUTRITION,

disproportions of vitamins with other components, pathol.  
results, review (Rus))

**EXCERPTA MEDICA Sec 5 Vol 12/10 General Path Oct 59**

2827. HYPERTENSION CAUSED BY CHOLINE DEFICIENCY, AND ITS REVERSIBILITY (Russian text) - Cherkes L. A. and Dinerman A. A. - ARKH. PATOL. 1959, 20/12 (16-24) Grapsus 2 Mus. 1  
In connection with the experiments of Best and Hartroft (Fed. Proc. 1949, 8, 619) two series of experiments in rats were carried out. Series I: (1) 30 male rats of 30-40 days old, kept as control, were given a choline-free diet with additionally 20 mg, low-chlorine choline. (2) 60 rats received the same choline-free diet, at first without additional choline, which was given only from the 8th day onwards. Later on, the animals were given a complete diet. Starting after 2.5-3 months the blood pressure was determined every 2 weeks. In 20 animals, the capillary resistance was determined plethysmographically after the choline had again been withheld. Series II: (1) Experiments in which it was attempted to prevent the hypertension by administration of choline, folic acid and vit. B<sub>12</sub>. (2) Attempts to influence an existing hypertension by means of the following diet: 18% casein, 30% corn starch, 34% sugar, 14% lard, 4% salt mixture of Hubbel, Mendell and Wakeman, plus vit. A, B and D. The following results were obtained: a choline-deficient diet during youth

may lead to hypertension at later age, in spite of later sufficient nutrition. Characteristic alterations of the ocular fundus increased non-protein nitrogen in the blood, abnormal results of the cold pressor test, and abnormalities of the arterioles of the kidneys are found as well. In the case of an existing hypertension, a complete diet may lead to a decrease of the blood pressure to normal.

Brandt - Berlin (V, 18)

CHERKES, L.A.; DINERMAN, A.A.

Effect of sorbitol on the course of choline deficiency. Biokhimiia  
24 no.2:329-335 Mr-Ap '59. (MIRA 12:?)

1. Laboratory of Pathological Physiology, Institute of Nutrition,  
Academy of Medical Sciences of the U.S.S.R., Moscow.  
(SORBITOL, eff.  
on exper. choline defic. (Rus))  
(CHOLINE, defic.  
eff. of sorbitol (Rus))

CHERKES, L.A., prof. (Moskva)

Problem of choline insufficiency. Klin.med. 37 no.6:28-33  
Je '59. (MIRA 12:8)

(CHOLINE, defic.  
biol.changes in rats (Rus))

CHERKES, L.A.; STRUKOV, A.I.; VOLGAREV, M.N.; SMIRNOV, V.P.

Cirrhosis and tumors of the liver in choline and protein insufficiency. Vop.pit. 19 no.1:3-16 Ja-F '60. (MIRA 13:5)

1. Iz laboratorii patologicheskoy fiziologii (zav. - prof. L.A. Cherkes) Instituta pitaniya AMN SSSR i iz kafedry patologicheskoy anatomii (zav. - chlen-korrespondent AMN SSSR prof. A.I. Strukov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

(LIVER NEOPLASMS experimental)  
(LIVER CIRRHOSIS experimental)  
(CHOLINE deficiency)  
(PROTEIN deficiency)  
(NUTRITION DISORDERS experimental)

CHERKES, L.A.; APTEKAR<sup>1</sup>, S.G.

Excretion of riboflavin in the urine in experimental tumors.  
Arkh. pat. 22 no. 2:27-37 '60. (MIRA 13:12)  
(TUMORS) (RIBOFLAVIN)

CHERKES, L.A.; DINERMAN, A.A.

Preventive effect of prolonged sorbitol administration in choline deficiency. Biokhimia 25 no.1:102-105 Ja-F '60. (MIRA 13:6)

1. Laboratory of Pathological Physiology, Institute of Nutrition,  
Academy of Medical Sciences of the U.S.S.R., Moscow.  
(SORBITOL pharmacol.)  
(CHOLINE defic.)  
(KIDNEYS pathol.)

"APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000308420016-7

CHERKES, L. A. (USSR)

"Hepatic affections of alimentary origin and the pathways of their restitutions"

Paper presented at the Third International Congress of Dietetics,  
London, 10-14 July 1961.

APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000308420016-7"

CHERKES, L.A.; APTEKAR', S.G.; VOLGAREV, M.N.

Tumors of the liver produced by selenium. Biul. eksp. biol. i med. 3[i.e.53] no.3:78-83 Mr '62. (MIRA 15:4)

1. Iz laboratorii patologicheskoy fiziologii (zav. - prof. L.A. Cherkes) Instituta pitaniya AMN SSSR, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR A.Ye.Braunshteynom.  
(LIVER--TUMORS) (SELENIUM--PHYSIOLOGICAL EFFECT)

CHERKES, L.A., prof.

"Vitamin A and vitamin A insufficiency" by A.O. Natanson.  
Reviewed by L.A. Cherkes. Vop. pit. 21 no.2:91-93 Mr-Ap '62.  
(MIRA 15:3)  
(VITAMINS--A)  
(NATANSON, A.O.)

CHERNES, L.A. (Moskva)

History of the discovery of the antipellagra vitamin; 25th  
anniversary of the discovery of vitamin P. Vop. pit. 22  
no.4:84-88 Jl. Ag '63.

(MTEA 17:10)

CHERKES, L.D.; SLEZAK, I.

Lysine decarboxylase production by submerged cultures of  
Bacterium cadaveris. Mikrobiologija 34 no.2:223-229 Mr-Ap  
'65. (MIRA 18:6)

1. Nauchno-issledovatel'skiy institut antibiotikov, Praga,  
Chekhoslovakiya.

CHERKES, L.D.; CHERKES, Yu.I.; ZHENISHEK, Z. [Zenisek, Z.]; LAUSHER, O.  
[Lausser, O.]

Rapid method of paper chromatography. Zhur. anal.khim. 18  
no.12:1436-1441 D '63. (MIRA 17:4)

1. Nauchno-issledovatel'skiy institut antibiotikov, Roztoki u Pragi,  
Chekhoslovakiya.

URKS, M.; CHERKES, L.D.; SEVERA, Z.

Improvement in the filtration of culture fluid in the production of antibiotics from Actinomyces. Med.prom. 14 no.11:21-27 N '60.

(MIRA 13:11)

1. Nauchno-issledovatel'skiy institut antibiotikov, Chekhoslovatskaya Sotsialisticheskaya Respublika.  
(ANTIBIOTICS)  
(ACTINOMYCES)

CHERNINA, L.L., inzh.

Composition and structure of baddaleyite-corundum refractories  
with optimum glass resistance. Stek. i ker. 22 no.2;7-11 F '65.  
1. Saratovskiy zavod tekhnicheskogo stekla.  
(MIRA 18:3)

(N) L 2115-66 EWT(1)/EWA(h) GW

ACCESSION NR: AP5021873

UR/0362/65/001/008/0361/0871  
551.466.6235  
36  
6AUTHOR: Cherkesov, L. V.

44,55

12,55

TITLE: On the tsunami problem in a heterogeneous sea

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 8, 1965, 861-871

TOPIC TAGS: seismic wave, oceanography, perturbation, ocean dynamics

ABSTRACT: The three-dimensional problem of long seismic sea waves that are produced on the surface of a heterogeneous sea from an arbitrary initial elevation (taking Coriolis forces into account) is examined on the basis of a model of discontinuously variable depth. Perturbations of the free surface and interface in the shallow region are analyzed, and the amplitudes of the surface and internal waves are calculated. The following formulas are derived for waves on the free surface and at the interface in the region where  $x > 0$ :

Card 1/3

L 2115-66

ACCESSION NR: AP5021873

$$0 < t < (b-a)r_1 + xr_2, \quad \zeta_2 = \zeta_1 = 0;$$

$$(b-a)r_1 + xr_2 < t < (b+a)r_1 + xr_2,$$

$$\zeta_2 = \zeta_0 \frac{\Delta_2}{\Delta} u_2, \quad \zeta_1 = \zeta_0 \frac{\Delta_2 - h_3}{\Delta h_1 + h_3} u_2;$$

$$(b+a)r_1 + xr_2 < t < (b-a)r_1 + xr_1 e^{-h_1},$$

$$\zeta_2 = \zeta_0 \frac{\Delta_2}{\Delta} (u_2 - \beta_2), \quad \zeta_1 = \zeta_0 \frac{\Delta_2 - h_3}{\Delta h_1 + h_3} (u_2 - \beta_2);$$

$$(b-a)r_1 + xr_1 e^{-h_1} < t < (b+a)r_1 + xr_1 e^{-h_1},$$

$$\zeta_2 = \zeta_0 \frac{1}{\Delta} [\Delta_2(u_2 - \beta_2) + \Delta_4 u_4],$$

$$\zeta_1 = \zeta_0 \frac{1}{\Delta} \left[ \frac{\Delta_2 h_3}{h_1 + h_3} (u_2 - \beta_2) - \frac{\Delta_4 (h_1 + h_3)}{e h_3} u_4 \right];$$

$$t > (b+a)r_1 + xr_1 e^{-h_1},$$

$$\zeta_2 = \zeta_0 \frac{1}{\Delta} [\Delta_2(u_2 - \beta_2) + \Delta_4(u_4 - \beta_4)],$$

$$\zeta_1 = \zeta_0 \frac{1}{\Delta} \left[ \frac{\Delta_2 h_3}{h_1 + h_3} (u_2 - \beta_2) - \frac{\Delta_4 (h_1 + h_3)}{e h_3} (u_4 - \beta_4) \right].$$

Card 2/3

L 2115-66

ACCESSION NR: AP5021873

It follows from these equations that the source of principal perturbations in a shallow region on the free surface and at the interface is a surface wave. This wave arrives from the deep region at the terrace of the bottom. It is produced by an initial perturbation and travels in the deep region with the velocity

$v = \sqrt{gH}$ , where  $H = h_1 + h_3 + h_5$  is the elevation of the deep region. Orig. art.  
has: 1 diagram, 60 formulas, and 1 table.

ASSOCIATION: Akademiya nauk BSSR, Institut matematiki (Academy of Sciences,  
BSSR, Institute of Mathematics)

44,55

SUBMITTED: 220ct64

ENCL: 00

SUB CODE: ES

NO REF SOV: 004

OTHER: 002

Card 3/3

CHERKES, M. I.

36987. Okraska Zhelezistykh Obrazovaniy Slizistoy Obolochki Mushskogo  
Mocheispuskatel'nogo Kanala pri Uretroskopicheskem Obsledovanii. Uchen.  
Zapiski (L'vovsk, Nauch.-issled. Kozhno-venerol. In-t), t. II, 1949, c. 29-33

SO: Letopis' Zhurnal'nykh Statey, Vol 50, Moskva, 1949

CHERKES, M. I.

36988. CHERKES, M. I. i VISHNEV'KIN, M. S. Lecheniye Mušskoy Gonorrej  
Penitailinom. Uchen. Zapiski (L'vovsk. Nauch.-issled. Kozhno-venerol.  
In-t), t. II, 1949, c. 84-88

SO: Letopis' Zhurnal'nykh Statey, Vol 50, Moskva, 1949

VISHNEVSKIY, Isaak Davidovich; LAVUT, Andrey Aleksandrovich; LEFESHCHUK,  
Petr Kondrat'yevich; CHERKES, Mikhail Yuryevich; MALAKHOV,  
K.N., inzh., retsenzent; PREDE, V.Yu., inzh., red.; VOROTNIKOVA,  
L.F., tekhn. red.

[Industrial transportation sections and railroad stations]Tran-  
sportnyi tsekh i stantsiiia. Moskva, Transzheldorizdat, 1962.  
58 p.  
(Railroads, Industrial) (Railroads--Freight)

(MIRA 15:11)

Cherkes, D. I.

✓ Pharmacology of hypotensive substances. A. M. Dom-  
brov's'ka, V. A. Kremenskaya, and O. I. Cherkes (A. A.  
Bogomolets Med. Inst., Kiev). *Fiziol. Zhur., Akad. Nauk  
USSR, R.S.R. 1, No. 4, 80-7(1955)* (Russian summary, 88-  
9).—The pharmacologic properties of hexamethonium iodide  
are studied. The subcutaneous L.D.<sub>50</sub> is 240 mg./kg.,  
L.D.<sub>10</sub> = 175 mg./kg., and M.L.D. = 100 mg./kg. The  
intravenous L.D.<sub>50</sub> is 100 mg./kg., L.D.<sub>10</sub> = 55 mg./kg., and  
M.L.D. = 40 mg./kg. The compd. exerts hypotensive ef-  
fects on dogs and cats, the intensity and duration depending  
upon the method of administration, the size of the dose, and  
the physiol. idiosyncrasies of the individual animal. In the  
early stages (2-4 months) of exptl. reflex type of hyperten-  
sion, the compd. produces effects lasting 1-1.5 months. It  
is concluded that the hypotensive properties are caused by  
the blocking of sympathetic channels. In addn., the compd.  
exerts an inhibitive effect on neurotransmission and on the  
parasympathetic nodes of the vegetative branch of the nerv-  
ous system. The compd. has no effect on the peripheral or  
adrenoreactive vascular systems. Toxic doses of the compd.  
exhibit curare-like effects in warm-blooded animals. In  
cold-blooded animals such effects become evident with much  
smaller doses. The drug inhibits nerve-impulse transmission  
in the sympathetic and parasympathetic ganglia and lowers  
the blood pressure in normal cats and rabbits after a single  
dose. B. S. Levine

(2)

100-12-14

CHERKES, V.A.

Inhibition of cerebrospinal reflex in stimulation of various cerebral parts in warm-blooded animals. Fiziol. zh. SSSR 38 no.1:33-38 Jan-Feb 52. (GLML 21:5)

1. Department of Normal Physiology, Institute of Clinical Physiology Academy of Sciences Ukrainian SSR imeni Academician A.A. Bogomolets, Kiev.

CHERKES, V. A.

USSR/Medicine - Physiology

FD 243

Card 1/1

Author : Cherkes, V. A.

Title : Development of inhibition in the spinal cord after unilateral section at stimulation of various parts of the brain

Periodical : Fiziol.zhur. 2, 167-173, Mar/Apr 1954

Abstract : Electrical stimulation of the right motor zone of the cerebral cortex produces inhibition of the spinal flexion reflex of the right hind leg; in cats. This inhibition is maintained after section of the unilateral side (right) of the spinal cord; it disappears after section of the contralateral (left) side. The inhibition of the spinal flexion reflex through stimulation of subcortical centers is not affected by section of the ipsilateral or contralateral side of the spinal cord. Complete section of the spinal cord abolishes the inhibition of spinal reflexes through cortical or subcortical stimulation. Eight kymograms. Nine references, seven Soviet.

Institution : Institute of Physiology, Academy of Sciences of the Ukrainian SSR, Kiev

Submitted : May 2, 1952

CHERKES, V.A.

Modification of motor reflexes in stimulation of the corpus striatum.  
Vop. fiziol. no.7:38-43 + 54.  
(MIRA 8:1)

1. Institut fiziologii AN USSR.  
(BASAL GANGLIA,  
motor, eff. of stimulation of corpus striatum in cats)  
(REFLEX,  
motor, eff. of stimulation of corpus striatum in cats)  
(MOVEMENT,  
eff. of stimulation of corpus striatum on motor reflexes  
in cats)

"APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000308420016-7

CHERKES, V.A.

Problem of Sechenov's inhibition. Vopr.fiziol. no.8:13-33 '54.  
(MIRA L4:1)  
(NEUROPHYSIOLOGY)

APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000308420016-7"

CHERKES, V.A.

Modification of conditioned reflexes following irritation of  
subcortical formations. Vopr.fiziol. no.9:68-80 '54.

(MIRA 14:1)

1. Institut fiziologii im. A.A. Bogomol'tsa Akademii nauk USSR,  
Laboratoriya vysshey nervnoy deyatel'nosti.

(BRAIN, physiology,  
eff. of subcortical stimulation on  
conditioned reflex in dog)  
(REFLEX, CONDITIONED,  
eff of subcortical stimulation in dogs)

~~SECRET~~ TCHERKES, V.A.

EXCERPTA MEDICA Sec.2 Vol.9/8 Physiology, etc. Aug56

3649. TCHERKES V.A., Kieff, \*Effect of stimulation of subcortical structures on conditioned reflexes (Russian text) Z. VYSC. NERV. DEJATEL. 1955, 5/3 (415-419) Illus.5

Various points of nucleus caudatus and pulvinar, thalamus were electrically stimulated (10-12 v. and 5/sec. or 5-8 v. and 10/sec.) by means of implanted electrodes in dogs in which defensive conditioned reflexes were elaborated. It was found that stimulation of the nucleus caudatus completely inhibited the defensive motor conditioned reaction, while stimulation of the pulvinar gave the same inhibitory effect only when the intensity was increased to 16 v. Wyrwicka - Lódz

A.  
CHERKES, V.O.

On the physiology of subcortical and cortical relations [with  
summary in English]. *Fiziol.zhur.* [Ukr.] 3 no.3:25-30 My-Je '57.  
(CONDITIONED RESPONSE) (MLRA 10:8)  
(CEREBRAL CORTEX)

CHERKES, V. A. Doc Med Sci -- (diss) "On the physiological mechanism of certain types of central inhibition." Kiev, 1958. 24 pp with illustrations (Acad Sci Ukrainian SSR. Department of Biol Sci), 100 copies. List of author's works, p 24 (11 titles) (KL, 14-58, 116)

CHERKES, V.A. [Cherkes, V.O.]

Physiological connections of the caudate nucleus with the cerebral cortex. Fiziol. zhur. [Ukr.] 7 no.4:474-481 Jl-Ag '61.

(MIRA 14:7)

1. Laboratory of Higher Nervous Activity of the A.A.Bogomoletz Institute of Physiology of the Academy of Sciences of the Ukrainian S.S.R., Kiyev.

(BRAIN)

CHERKES, V.A. [Cherkes, V.O.]; MARTYNNENKO, N.A.

Changes in the biopotentials of the cortex during stimulation of the nucleus caudatus by a frequent rhythm. Fiziol. zhur [Ukr.] 8 no.4:481-487 Jl-Ag '62.  
(MIRA 1884)

1. Laboratory of the Higher Nervous Activity of Man and Animals of the A.A.Bogomoletz Institute of Physiology of Academy of Sciences of the Ukrainian S.S.R., Kiev,

CHERKES, V.A. [Cherkes, V.O.]

I.M. Sechenov's theory of reflexes and some problems in the  
modern physiology of subcortical formations. Fiziol. zhur.  
[Ukr.] 9 no.5:592-595 S-0163 (MIRA 17:4)

1. Laboratoriya vysshey nervnoy deyatelnosti cheloveka i  
zhivotnykh Instituta fiziologii imeni Bogomol'tsa AN UkrSSR,  
Kiiev.

**CHERKES, V.A.**

Physiological analysis of ascending connections of the basal ganglia. Fiziol. zhur. 49 no.2:158-163 F'64 (MIRA 17:3)

1. Laboratoriya vysshey nervnoy deyatelnosti Instituta fiziologii imeni A.A. Bogomol'tsa AN UkrSSR, Kiyev.

Globus pallidus

Functional interrelation between the neostriatum and globus pallidus.  
Fiziol. zhurn. 50 no.12:1409-1414 D 1964. (NIRA 18:9)

• Otsitel vysshey nervnoy deyatel'nosti Instituta fiziologii AN  
UkrSSR imeni A.A.Bogomol'tsa, Kiysv.

USSR / Human and Animal Physiology. The Nervous System. T

Abs Jour: Ref Zhur-Biol., No 9, 1958, 41682.

Author : Cherkes, V. O.

Inst : Not Given.

Title : On the Physiology of Cortico-Subcortical Relations.

Orig Pub: Fiziol. zh. 1957, 3, No 3, 25-30.

Abstract: In 2 dogs, with electrodes inserted in the area of the left tuber of the lamina quadrigemina and the right thalamus, the threshold of stimulation of the subcortical formations, fully suppressing the conditioned reflex flexion of the right or left posterior extremities, was different in ipsi- and contralateral relations, but fluctuated within the values corresponding to the given subcortical structures. (For inst.: at a frequency of 10 gc, for the stimulation of the lamina quadrigemina 4-4.5 v, for the thalamus 13-16 v). -- K. S. Ratner.

Card 1/1

109

KOP'YEVA, T.N., student; CHERKES, V.L., student

Changes in the liver during the early phases of protein-choline deficiency. Trudy l-go MMI 22:192-199 '63 (MIRA 18:2)

CHERNOV, V.A. [Chernov, V.O.]; PIROCHKIN, K.V. [Myronchuk, K.V.]

Functional correlations between the dorsomedial nucleus of the thalamus and the corpus striatum as demonstrated by means of inhibiting reactions. Fiziologicheskii zhurnal. [Ukr.] 11 no. 10-18 Ja-F '65. (MIRA 18:7)

I. Laboratoriya vysshey nervnoy deyatel'stviia Instituta fiziologii im. A.N. Bogomol'tsa AN UkrSSR, Kiev.

CHERKES, V.O.

"Internal inhibition as a physiological problem" by P.K.Anokhin.  
Reviewed by V.O.Cherkes. Fiziol.zhur. [Ukr.] 5 no.3:402-407  
My-Je '59. (MIRA 12:10)

(INHIBITION)  
(ANOKHIN, P.K.)

CHERKES, L.D.; CHERKES, Yu.I.; ZHENISHEK, Z. [Zenisek, Z.]; LAUSHER, O.  
[Lauser, O.]

Rapid method of paper chromatography. Zhur. anal.khim. 18  
no.12:1436-1441 D '63. (MIRA 17:4)

1. Nauchno-issledovatel'skiy institut antibiotikov, Roztoki u Pragi,  
Chekhoslovakiya.

CHERKESOV, A.G.

~~SECRET~~  
Cotton-wool carding machine for waste processing. Leg.prom. 16  
no.1:48-49 Ja '56. (MLRA 9:6)  
(Carding machines)

CHERKESOV, A. I.  
CA

New method of detection and determination of traces of hydrazine. L. M. Kul'berg and A. I. Cherkesov (Chernyshevskii State Univ., Saratov). *Zhur. Anal. Khim.*, 6, 304-70(1951).—The method is based on the reaction of aq.  $\text{N}_2\text{H}_4\text{H}_2\text{SO}_4$  soln. with an alc. soln. of picryl chloride. When this reaction occurs in an alk. soln. it gives a pink-violet color. By physico-chem. analysis it was found that the two react in 1:2 ratio and in the presence of  $\text{NaOH}$  the reaction product is Na hexanitrohydrobenzene. The max. light absorption is at 630 m $\mu$ . The greatest color intensity develops at pH 7.04-7.70, after 40-45 min., at 20°. For a spot test, place a drop of 1.5% alc. soln. of picryl chloride on filter paper, superimpose 1 drop of the soln. to be tested, another drop of picryl chloride, and expose to  $\text{NH}_3$ . A blue spot, sometimes surrounded by a red ring, indicates  $\text{N}_2\text{H}_4$ . The sensitivity of this test is  $5 \cdot 10^{-6}$  g. of hydrazine and a diln. limit 1:400,000. Under similar conditions  $\text{NH}_4\text{OH}$  produces a yellow-orange spot with a sensitivity of 0.2  $\gamma$  and limiting diln. 1:25,000. The presence of  $\text{NH}_4\text{OH}$  interferes with the test for  $\text{N}_2\text{H}_4$  when the  $\text{N}_2\text{H}_4:\text{NH}_4\text{OH}$  ratio exceeds 1:10. When too much  $\text{NH}_4\text{OH}$  is present,  $\text{N}_2\text{H}_4$  can be detd. chromatographically with diphenylguanidine as absorbent. For the detn. of  $\text{N}_2\text{H}_4$  mix 1 ml. of the soln. to be analyzed with 0.2 ml. of satd. picryl chloride soln., add 3.8 ml. of buffer soln. of pH 7.04, filter after 45 min. through cotton, and collect the filtrate in a Pulfrich photometer receptacle, and take the readings with a light filter and  $\text{H}_2\text{O}$  as compensating liquid. Calcs. are made either from a calibrated curve or with the aid of the formula  $C = 14.45 E$ , where  $C$  is the concn. of  $\text{N}_2\text{H}_4$  in  $\gamma$  g. and  $E = \log I_0/I$  is the adsorption. This serves to det. 1-25  $\gamma$  of  $\text{N}_2\text{H}_4$  with an av. error not exceeding 0.5  $\gamma$ . M. Husek

1952

Chemical Abst.  
Vol. 48 No. 9  
May 10, 1954  
Analytical Chemistry

(4) 9

New method of rapid synthesis of organic reagents for qualitative analysis. I. M. Kurnikov, I. S. Mustafin, and A. V. Cherkasov (Kharkov Univ., Saratov). *Ukrain. Khim. Zhur.* 18, 377-82 (1952) (in Russian). Numerous useful org. reagents can be prep'd. in a few min. by simple trituration of the components in a mortar; these show the same order of sensitivity toward various ions as do the conventionally synthesized reagents. Thus, rubbing 2-naphthol,  $\text{NaNO}_2$ , and  $\text{KHSO}_4$  1-3 min. gives a brown solid, usable as 1-nitroso-2-naphthol for Co and Zr detection. 1-Naphthol,  $\text{NaNO}_2$ , and  $\text{SnCl}_4$  similarly give 2-nitroso-1-naphthol, suitable for Hg or Co. Resorcinol,  $\text{NaNO}_2$ , and  $\text{KHSO}_4$  give dinitrosoresorcinol, suitable for  $\text{Cu}^{++}$  and  $\text{Fe}^{++}$ . Phthalic anhydride, hydrazquinone, and  $\text{S}\text{Cl}_2$  with boric acid or  $\text{NaHCO}_3$  give similarly (the product was heated briefly in the test tube before use) quinizarin, suitable for Al detn. Paraformaldehyde,  $\text{NH}_2(\text{OH})\text{HCl}$ , and  $\text{K}_2\text{CO}_3$  give formaldoxime, suitable for  $\text{Cu}^{++}$ ,  $\text{Ni}^{++}$ , or  $\text{Mn}^{++}$ . Salicylic acid, paraformaldehyde, and  $\text{NaNO}_2$  (a little  $\text{H}_2\text{SO}_4$  added) similarly give aurin tricarboxylic acid ( $\text{NH}_4$  salt), suitable for Al or  $\text{Fe}^{++}$ .  $\beta$ -Nitroaniline, 8-quinaldinol,  $\text{NaNO}_2$ , and  $\text{KHSO}_4$  give ( $\rho$ -nitrophenylazo)-8-quinaldinol, suitable for Mg detn.  $\beta$ -Nitroaniline, 1,8-dihydroxy-3,0-naphthalenedisulfonic acid,  $\text{NaNO}_2$ , and  $\text{KHSO}_4$  give ( $\rho$ -nitrophenylazo)chromotropic acid, suitable for detn. of B or Ge. Safranine,  $\text{NaNO}_2$ , and  $\text{KHSO}_4$  give Diazone Green S, suitable for  $\text{Sn}^{+++}$  detn. Rubbing together 1-2 min. 0.05 g.  $\beta$ -nitroaniline, 0.1 g. 8-quinaldinol, 0.4 g.  $\text{KHSO}_4$ , and a little  $\text{CuSO}_4$  gives a mixt. which added to a soln. contg.  $\text{NO}_3^-$  ion gives a red ppt. or orange-red color.  $\text{Ph}-\text{NHNH}_2\text{HCl}$ , KOH, and  $\text{CS}_2$  give 2-mercapto-4-phenyl-1,3,4-thiadiazole-5-thione suitable for the detn. of Bi, Sb, and Pb. Rubbing K ferricyanide with syrupy  $\text{H}_3\text{PO}_4$  and  $\text{K}_2\text{P}_2\text{O}_7$  gives a reagent suitable for Zn detn. (red color or ppt.).  $\text{Cd}(\text{OAc})_2$ ,  $\text{KI}$ , pyridine, and  $\text{KHSO}_4$  give a substance suitable for Bi detn. (yellow color).  $\text{CICH}_2\text{CO}_2\text{H}$ ,  $\text{NH}_3$ ,  $\text{CNS}$ , and  $\text{PhNH}_2$  similarly yield thioglycolanilide, suitable for  $\text{Co}^{++}$  detn. G. M. Kosolapoff

9-2-54  
JGP

CHERKESOV, A. I.

Chemical Abst.  
Vol. 48 No. 9  
May 10, 1954  
Analytical Chemistry

9  
4  
Analytical utilization of the phenomenon of halochromism.  
I. Reaction of some dyes with antimony trichloride. V.L.  
M. Kul'berg, I. S. Mustafin, and A. I. Cherkessov (State  
Univ., Saratov), Ukrains. Khim. Zhur. 18, 641-6 (1952)  
(in Russian).—The color resulting from the reaction of  $SbCl_3$  with Sudan III is caused by the formation of a halochromic substance, an adduct of the components. Other azo dyes and phthaleins are capable of similar reactions. The Sudan III- $SbCl_3$  complex dissociates noticeably at elevated temp. until its abs. max. almost coincides with that of the initial dye. The abs. spectrum of the complex is coincident with that of Sudan III in  $H_2SO_4$ . Thymolphthalein can be used to detect  $SbCl_3$  on the basis of this reaction, performed by mixing the ingredients in  $CHCl_3$ , which forms a red color band on the vessel walls in the presence of  $SbCl_3$ ; the color is destroyed by moisture. The time of emergence of color is a rough measure of the concn. of  $SbCl_3$ , down to 0.005%. G. M. Kosolapoff

PF  
9-17-61

*CHERKESOV A.I.*

1122. The colorimetric determination of traces of  
ruthadium and caesium

The method is based on the formation of a complex between Ruthadium and Caesium ions. To 1 ml of sample add 5 ml of a 1% solution of the monosodium salt of the complex-forming agent. After 5 hr filter off the precipitate, dissolve it in 2 to 3 ml through with alcohol, add 1 ml 5% and 5 ml 10% aqueous ammonia.

Determination of Ruthadium and Caesium. It is established that the relationship between absorption ( $E$ ) and the concentration ( $C$ ) of Cs, Rb, Ba, Li, and Mg may be expressed by the equations:  $C = 204.1E + 50.6$  for Rb, and  $C = 230.4E - 58.2$  for Cs. The presence of Li, Ca, Sr, Ba and Mg, and of Na in moderate amounts, has little influence on the accuracy. By the described method, 10 to 130  $\mu\text{g}$  of Rb or Cs can be determined with an error of 5%.

Cherkesov, A.I.

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3380. Analytical application of the reaction of  
formation of hexadithydratobenzene. A. I.

Cherkesov and L. M. Kul'berg (N. G. Chernyshevskii  
Saratov Univ.) Zhur. Anal. Khim., 1950, 11 (1),

85-90.—*Detection of 2-chloro-1,3,5-trinitrobenzene  
(picryl chloride) in the presence of mono- and di-  
nitrochlorobenzenes*.—One drop of 1 per cent. aq.  
hydrazine sulphate soln., one drop of 6 per cent.  
aq. NaOH soln. and one drop of an acetone soln. of  
picryl chloride are placed on filter-paper. A pink  
colour appears with  $\leq 3 \times 10^{-4}$  g of picryl chloride  
at a limiting dilution of 1 in 430,000. The mono-  
and di-nitro compounds do not interfere. *Detection  
of 2,4,6-trinitrophenol (picric acid) in the presence  
of mono- and di-nitrophenols*.—The picric acid is  
heated with  $\text{PCl}_3$  to give picryl chloride, which is

detected as described above. *Detection of  $\text{PCl}_3$  in  
the presence of  $\text{PCl}_5$* .—The sample (three to four  
drops) of  $\text{PCl}_3$  to be examined for the presence of  
 $\text{PCl}_5$  is heated with picric acid and the product is  
subjected to the reaction described above;  $\text{PCl}_5$   
does not react with picric acid. G. S. SMITH

*CHERKESOV*

15  
457. Analytical use of certain dyes containing hydroxyl groups. I. New highly sensitive and selective reactions for antimony. A. J. Cherkessov and A. I. Busov (Astrakhan Institute of Fish Industry and Economy) 28. 7. 1957. Klin.

1957, 12 (2), 268-270.—In acid soln. of Sb<sup>III</sup>, a 2% soln. of gallein in acetone gives a violet colour which is sensitive to 0.005 µg of Sb (limiting dilution 1 in  $3.3 \times 10^3$ ). No interference is caused by 1000 to 10,000-fold amounts of alkali and alkaline-earth metals, Mg, Zn, Cd, Hg<sup>I</sup>, Hg<sup>II</sup>, Pb, Al, Fe, Cr<sup>III</sup>, Co, Ni, Mn, Cu, UO<sub>4</sub><sup>2-</sup>, Th or Bi, or by 100-fold amounts of Sn<sup>II</sup> and Sn<sup>IV</sup>. The reaction can be used for the photometric determination of Sb and Bi in the presence of Pb. With haematoxylin in acetone soln. on filter-paper, followed by a soln. of Sb<sup>III</sup> and acetone and then, after drying, by 0.5 N HCl, a blue or violet spot on a red background is obtained. The minimum amount of Sb detectable is 0.03 µg (limiting dilution 1 in  $5 \times 10^4$ ). Other ions behave as with gallein. G. S. SMITH

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1-4E3A

1-4E2C

CHERKESOV A. I.

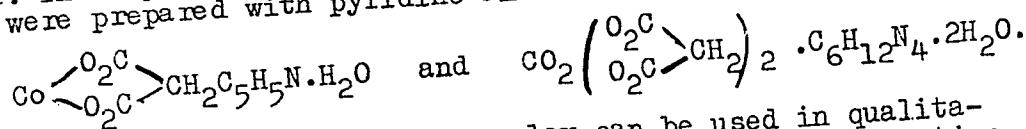
73-3-17/24

AUTHOR: Cherkesov, A. I., and Zhigalkina, T. S.

TITLE: Complexes of Co(II)-malonate with Organic Bases and Their Use in Analysis. (Kompleksy Kobal't (II)-malonata s Organicheskimi Osnovaniyami i ikh Analiticheskoye Primeneniye)

PERIODICAL: Ukrainskiy Khimicheskiy Zhurnal, 1957, Vol. 23, No.3, pp. 381-383 (USSR).

ABSTRACT: The crystalline complex cobalt(II)-malonate (2 substances) were prepared with pyridine and urotropine:



The urotropine-containing complex can be used in qualitative analysis as well as for the gravimetric determination of cobalt. The malonate-pyridine complex of cobalt can be used for the macro- as well as for the micro-analysis of cobalt in the presence of large quantities of alkaline-, alkaline earth metal-,  $\text{Cu}^{2+}$ ,  $\text{Cr}^{3+}$  and  $\text{Mg}^{2+}$  ions as well as in the presence of small quantities of  $\text{Ni}^{2+}$  and  $\text{Al}^{3+}$ . The malonate-urotropine complex of cobalt is most suitable as it is only slightly soluble in the reaction mixture.

Card 1/3 (0.011 ml/100 ml) and in water (1.03 ml/100 ml) at 20°C,

73-3-17/24

Complexes of Co(II)-malonate with Organic Bases and Their Use in Analysis.

whilst maintaining a stable water-content. The constant weight can be determined rapidly when drying the substance at 100°C. When heating the substance to 140°C a 3.2% loss in weight occurs, at temperatures exceeding 150°C decomposition is observed. Analytical data of both complexes are given. Values of weight determinations of cobalt in the form of its malonate-urotropine complex are tabulated.

The cobalt content in the solution was determined by the gravimetric method (in the  $\text{CoSO}_4$ -form). The cobalt was precipitated in the following way: To 5 ml of approx. 0.1 mole solution of the cobalt salt 1 - 1.3 ml of a 0.5 mole malonic acid solution is added as well as 10ml of a 1-mole urotropine solution. This mixture is heated up to boiling temperature. The reddish precipitate  $\text{Co}_2(\text{C}_3\text{H}_2\text{O}_4)_2 \cdot \text{C}_6\text{H}_{12}\text{N}_4$ .

$\text{H}_2\text{O}$  is allowed to settle for 3 hours, is filtered through a glass filter (No. 4); it is then washed with small quantities of cooled water (10 - 15 ml) and dried at 100°C to constant weight. The conversion factor is 0.2368. The precipitate of the complex can be burnt and the cobalt

Card 2/3

CHERKESOV, A.I.

51-6-25/26

AUTHOR: Cherkesov, A. I.

TITLE: On Displacement of the Absorption Spectra Maxima of Certain Organic Reagents on Ionisation and on Interaction with Metal Ions. (O smeshchenii maksimumov spektrov pogloschcheniya nekotorykh organicheskikh reaktivov pri ikh ionizatsii i vzaimodeystvii s ionami metallov.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.II, Nr.6,  
pp.825-827. (USSR)

ABSTRACT: The author deduces the displacement of the absorption spectra maxima of certain organic dyes on ionisation and interaction with metal ions. Dyes are complex systems of conjugated  $\pi$ -bonds. The structure of dye molecules depends mainly on the conjugation of the  $\pi$ -bonds and on ionisation. The following dyes were treated in detail: symmetrical hexanitrohydrazobenzene and alizarin. It is found that on ionisation of the organic reagent (dye) molecules and on their interaction with metal ions a linear dependence holds between the wavelength of the absorption maximum and the number of conjugated bonds.

Card 1/2

CHERKESOV, A.I.

32-1-3/55

AUTHORS:

Busev, A.I., Kiseleva, L.V., Cherkesov, A.I.

TITLE:

The Complexometric Determination of Thorium by Means of  
1-(2-Pyridilazo)-2-Naphthol as Natural Indicator (Kompleksometriches-  
koye opredeleniye toriya s 1-(2-piridilazo)-2-naftolom v kachestve  
indikatora).

PERIODICAL:

Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 1, pp. 13-16 (USSR)

ABSTRACT:

The indicator mentioned, which is known in Soviet scientific literature under the name of "PAN", was used also by Flaschka and Abdine [Ref. 2], but in a different form. A comparison of the method used by them with that suggested here showed that, in the case of the method developed by Flaschka and Abdine, the presence of a large number of secondary ions influences the change of color. According to the method recommended here, the solution of the indicator and its bonds is used in an aqueous solution of methyl alcohol (50%). For purposes of measuring the spectrophotometer "Cf-4" is used. As stated here, the change of color, it is true, is less distinct in the case of the method suggested than is the case with the method developed by Flaschka and Abdine, but the selectivity of the indicator is considerably greater. (There follows a description of the experiment). The following disturbing elements are mentioned: An excessive

Card 1/2

The Complexometric Determination of Thorium by Means of  
1-(2-Pyridilazo)-2-Naphthol as Natural Indicator

32-1-3/55

quantity of lead leads to the forming of trilons; the presence of mercury of tin causes the color to become dim; further disturbance is also caused by a content of trivalent iron-, bismuth-, indium- and vanadium. A content of iron has no disturbing effect if ascorbic acid is added to the solution. Disturbance is also caused by anions which form complex compounds or a common precipitation with thorium. The method suggested is used for the analysis of monazite sand as well as of other materials from which phosphoric acid must first be removed. There are 2 figures, 3 tables and 9 references, 3 of which are Slavic.

ASSOCIATION: State University imeni M.V. Lomonosov, Moscow (Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova).

AVAILABLE: Library of Congress

Card 2/2      1. Thorium-Determination    2. Thorium-Detection

CHERKESOV, A.I.  
USSR/Inorganic Chemistry. Complex Compounds.

Abs Jour: Ref. Zhur-Khimiya, No 1, 1958, 698.

Author : Cherkesov, A.I., Zhigalkina, T.S.

Inst :  
Title : Complexes of Cobalt (II)-Malonate with Organic Bases and Their  
Analytical Uses.

Orig Pub: Ukr. Khim. Zh., 1957, 23, No 3, 381-383.

Abstract: Crystalline complex compounds of cobalt ( $^{2+}$ ) malonate with pyridine and urotropine were synthesized to give crystalline complex compounds of compositions  $\text{Co}(\text{O}_2\text{C})_2\text{CH}_2\text{C}_5\text{H}_5\text{N}\cdot\text{H}_2\text{O}$  and  $\text{Co}[(\text{O}_2\text{C})_2\text{CH}_2]_2\text{C}_6\text{H}_{12}\text{N}_4\cdot\text{H}_2\text{O}$  (I). Complex (I) is recommended for detection and gravimetric determination of Co.

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-25-

Card : 1/1

SOV/91-58-2-22/31

AUTHORS: Varlamov, A.I. and Cherkesov, A.I.,  
Engineers

TITLE: To the Question of Using Parallel Wires  
Having Different Sections in Electric-  
Machine Windings (K voprosu primeneniya  
parallel'nykh provodov raznykh secheniy v  
obmotkakh elektricheskikh mashin)

PERIODICAL: Energetic, 1958, Nr 2, p 33-34 (USSR)

ABSTRACT: The "Sevkavenergoremont" enterprise re-tested  
the assertion of the engineer Ye. A. Dashevskiy  
according to which one may use parallel wires  
having different sections in electric-machine  
windings. The motors used in the tests were:  
one MT-62/6-type motor having 10 kW capacity,  
one R-42/4-type with 5.8 kW capacity and one  
AD-52/2-type having 12 kW capacity. The

Card 1/2

SOV/91-58-2-22/31

To the Question of Using Parallel Wires Having Different Sections in Electric-Machine Windings

ratio of the parallel-wires' sections in the stator's windings was taken as being approximately equal to 3. The results of the tests confirmed Dashevskiy's assertion. The results can also be used for power transformers. There are 2 tables and 1 Soviet reference.

Card 2/2

AUTHOR:

Cherkesov, A. I.

20-2-29/60

TITLE:

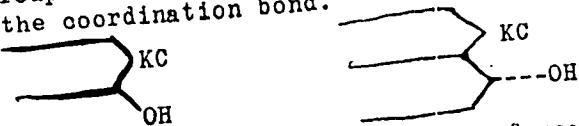
A Specific, Highly Sensitive Fluorescence Reaction For Aluminum  
 (Spetsificheskaya vysokochuvstvitel'naya fluorescensnaya re-  
 aktsiya na aluminii).

PERIODICAL:

Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 309-311 (USSR)

ABSTRACT:

Most of the organic reagents for aluminum are characterized by  
 a hydroxyl group in a peri- or ortho-position toward the atom  
 which forms the coordination bond.



In this case KC is this atom. A large group of reagents can be represented by the above-mentioned schemes (figures 1,2). The author contests that the fluorescence reaction by means of 1,4-dioxy- 5,8-dichloro-anthraquinone (reference 3) is specific. In this case of higher values of pH is this out of the questions, as this substance in the above-mentioned domain reacts with ions of many other metals. As the reaction mechanism was never studied, it is unknown whether the reaction belongs to the type of internal formation of complex or to the type of adsorption.

Card 1/4

A Specific, Highly Sensitive Fluorescence Reaction For Aluminum. 20-2-29/60

But it hitherto was the most sensitive fluorescence reaction for aluminum (table 1). The author succeeded in finding a much more sensitive substance. This is 2,3-oxynaphthoec acid I which is also specific for aluminum. This acid in the case of pH < 2 in ultraviolet light in an aqueous solution fluoresces green. In the case of pH < 2 it does not fluoresce. In benzene its fluorescence is violet, in chloroform -lilac, in alcohol - green. In ether and carbon tetrachlorid the fluorescence is extinguished. The green fluorescence may apparently be ascribed to the hydrogen bonds forming in aqueous solutions. The vapors of the acid under review fluoresce violet. From this may be concluded that dimers which form due to these hydrogen bonds are present in aqueous solutions. In the case of interaction of this acid with aluminum ions in an aqueous solution at pH 3 and more a bright light-blue fluorescence in the ultraviolet light develops. An instruction for performing the reaction is given. The following ions do not disturb this reaction: Ca, Sr, Ba, Mg, Zn, Cd, Hg, Pb, Sn, Ti, V, As, Sb, Cr, Mo, W, Mn, Co, Ni and Cu, when they are in their usual state of valence. Th<sup>4+</sup>, UO<sub>2</sub><sup>2+</sup> and Fe<sup>3+</sup> in the middle of the spot of the test solution on filter paper usually cause a field without fluorescence. But now, too, a light-blue fringe forms between the green-fluorescing sur-

Card 2/4

A Specific, Highly Sensitive Fluorescence Reaction For Aluminum. 20-2-29/60

rounding paper and the dark spot without fluorescence, when aluminum is present. A decrease in pH reduces the sensitivity of the reaction. In the case of high pH values magnesium disturbs the detection of aluminum, as it causes an analogous fluorescence. It was found that the reaction under review belongs to those of the type of internal formation of complex. (figure 1). It may be assumed that the composition of the internal-complex compound forming in this connection corresponds to the formula  $(C_{11}H_8O_3)_3Al$  with a possible structure II. In the solution the complex has a colloidal state. By means of this reaction it is possible quantitatively to determine traces of aluminum. In this connection work can be done with concentrations of from 0,1 to 0,01<sup>+</sup> per 1 ml. For this the method of a standard scale in the ultraviolet light should be employed. The above-mentioned acid may be recommended as a fluorescence-indicator in the range of from 1,9 to 2,3 pH. There are 1 figure, 1 table, and 4 Slavic references.

ASSOCIATION: Technical Institute for Fish-Industry and -Economy, Astrakhan'  
(Astrakhanskiy tekhnicheskiy institut rybnoy promyshlennosti i khozyaystva).

Card 3/4

A Specific, Highly Sensitive Fluorescence Reaction For Aluminum. 20-2-29/60

PRESENTED: August 3, 1957, by A. P. Vinogradov, Academician  
SUBMITTED: May 16, 1957  
AVAILABLE: Library of Congress

Card 4/4

SOV/75-14-50/30

**AUTHOR:** Bilibinovich, G. N.  
**SECTION OF:** Analytical Chemistry of the VIII Mandelstamov  
**CONFERENCE ON GENERAL AND APPLIED CHEMISTRY**  
**TITLE:** Congress on General and Applied Chemistry  
**PERIODICALS:** Zhurnal Analiticheskoy Khimii, 1959, Vol. 14, No. 4, pp. 511-512  
 (USSR)

Approximately 300 persons participated in the work of the Department of Analytical Chemistry among them representatives of various scientific research institutes, higher schools and industrial enterprises in Russia, scientists from China, Bulgaria, the DDR, Poland, Hungary, and Italy. Approximately 70 reports were heard. In his opening speech I. P. Allilaudin reported on the achieved results and on modern problems of physico-chemical analysis in heterogeneous systems. I. I. Kurnasov reported on modern aims in the use of organic reagents and series of problems of analytical chemistry.

A. A. Rubin showed at the example of halide and chalcogenide analyses the correlation between the stability of complexes and the position of the corresponding central atoms in the periodic system. V. M. Pashkov and F. M. Zobkov's lectures on the stability of complexes of Cu, Co, and Ni as dependence on the structure of the coordination molecule. T. J. Tsvetko lectured on the double character of reaction of some compounds in the formation of heteropolyoxo acids in complexes. The problem of application of heteropolyoxo acids was dealt with in the lectures of A. A. Zlobina and N. A. Slobodkina and members of their groups. A. I. Ulyanov and N. V. Shakhovskaya gave a large number of lectures on the use of polyalcohols in analytical chemistry. A. I. Dobtsev and D. M. Balakin lectured on the determination of tantalum using differential spectrophotometry. G. A. Korchevsky and L. A. Stol'yarenko reported on a highly sensitive titrimetric method with an ultraviolet microscope. Several lectures dealt with theoretical and theoretical problems of titanium analysis (G. I. Zabotin) and G. A. Chernikov (E. I. Zimnitskaya). V. A. Polusukov and M. M. Sivonok treated the question of flame photometry. Several lectures dealt with the separation of elements by polarimetry (G. I. Slobodkina), selective reduction of elements by polarimetry (A. P. Gorshkov), New carbonyl compounds (A. A. Tsvetko) and I. P. Gorbachov. New electrode materials were reported by V. G. Kostylev. The lecture of V. G. Kostylev and V. V. Petrenko on the use of co-mixtures of benzene and toluene and co-solvents in chromatography was treated in the use of asymmetric chromatography.

E. G. Mel'nikova lectured on the chemistry of uranium and thorium. E. M. Semenova showed possibilities of predicting the conditions of chromatographic separation of elements based on their position in the periodic system. T. A. Savchenko reported on the use of ion exchange in the investigation of the state of substances in solutions. A. S. Tsvetko and T. J. Petrenko lectured on the chromatographic separation of a series of elements. E. G. Polunina reported on adapting the properties of ion exchanger resins. Z. M. Cherkashin and associates reported on the chromatographic properties of carboxide precipitates in liquids of the organic. G. I. Slobodkina and associates treated the application of high polymers in chromatographic analysis. The lecture of A. A. Zubkovsky and M. A. Sviridov on the use of gas chromatography. Several lectures treated the use of radioactive isotopes for the chromatographic investigation of complex formations (G. I. Rybachkov and associates) for the investigation of the co-precipitation mechanism of ions of rare earth elements with sulfides (N. A. Sivchenko) and with oxides (I. A. Sivchenko) and for determining the use of elements by means of isotopic dilution (I. P. Allilaudin). G. I. Slobodkina by means of isotopic dilution (I. P. Allilaudin) in the field of elementary organic microanalysis with the participation of N. O. Sosulin, F. M. Gal'yan and V. B. Moshkov. The lectures of V. V. Shakhovskaya and her associates will be continued who treated the elaboration of rapid methods for the simultaneous determination of several elements from a mixture of boron, fluorine and chlorine-containing compounds.

Card 1/4

Card 2/4

Card 3/4

5(2)  
AUTHORS:

Cherkesov, A. I., Mel'nikova, A. S.

SOV/32-25-2-5/78

TITLE:

A Trilonometric Method of Determining Bismuth in Multi-component Alloys (Trilonometricheskiy metod opredeleniya vismuta v mnogokomponentnykh splavakh)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, pp 140-141 (USSR)

ABSTRACT:

The article describes an accelerated trilonometric method in which hematoxylin (Ref 2) and gallein are used as indicators (Ref 3). A titration is carried out at pH  $\approx$  1 in a nitric solution, and colored compounds of Bi, Sb, and Sn are formed. Up to a 5 %  $Fe^{3+}$  content the bismuth titration with trilon is not disturbed, at a content of 15 %  $Fe^{3+}$  sodium fluoride has to be added to the solution. The same applies to antimony, while tin is transformed into  $\beta$ -stannic acid at the dissolution of the alloy in nitric acid. The precipitation of stannic acid does not disturb the titration but retards the titration process somewhat before the point of equivalence is reached, which can be seen in the presence of hematoxylin. In comparison with the method described bismuth was determined gravimetrically in the form of BiOBr in artificial metal mixtures and easily melttable alloys (Table 2). When gallein

Card 1/2

SOV/32-25-2-5/78

A Trilonometric Method of Determining Bismuth in  
Multi-component Alloys

is used analogous results are obtained. However, the color  
change at the point of equivalence is less obvious. The  
analysis process is described. There are 2 tables and 3  
references, 2 of which are Soviet.

ASSOCIATION:  
Astrakhanskiy tekhnicheskiy institut rybnoy promyshlennosti  
i khozyaystva (Astrakhan Technical Institute of the Fish  
Industry and Economy)

Card 2/2

SOV/32-25-4-8/71

5(2)  
AUTHORS:Cherkesov, A. I., Zhigalkina, T. S.

TITLE:

Photometric Method for Determining Vanadium in Steels  
(Fotometricheskiy metod opredeleniya vanadiya v stalyakh)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 4, pp 406-408 (USSR)

ABSTRACT:

An accelerated photometric method is described for the vanadium determination in steels without previous separation of Fe, Ti, W, Mn, Co, Ni, Cu, and Cr. It is based on the oxidation of azo dyes by the vanadate in a medium combined with sulphuric acid. The two dyes (structural formulas are given) were obtained by a diazotization of the sulfanilic acids and naphthionic acids and a coupling with 2,3-oxinaphthoic acid. In the dissolution of one dye in 60% sulphuric acid a bright-red coloring arises the absorption spectrum of which is represented graphically (Fig 1,  $\lambda_{\text{max}} = 533 \text{ m}\mu$ ). The resulting compound of the azo dye and the acid has a halochromous character. By an addition of vanadate to the colored solution, the color intensity decreases proportional with the admixed quantity of vanadate. A calibration curve for the photometric vanadium determination is established according

Card 1/2

Photometric Method for Determining Vanadium in Steels SOV/32-25-4-8/71

to an ammonium-vanadate solution (Fig 2). In vanadium concentrations of 5-25 γ/ml the determination is not disturbed by  $\text{Cu}^{2+}$ ,  $\text{Cr}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Ti}^{4+}$ ,  $\text{NH}_4^{4+}$ ,  $\text{Mn}^{2+}$ ,  $\text{WO}_4^{2-}$  and ions of the alkali metals.  $\text{Fe}^{3+}$  must be bound by phosphoric acid,  $\text{MoO}_4^-$ ,  $\text{CrO}_4^{2-}$ ,  $\text{Cl}_2$ , and other strong oxidizing agents disturb the determination. The course of analysis, the preparation of the dye, and analytic results of a vanadium determination in steel (Table) are indicated. There are 2 figures, 1 table, and 1 Soviet reference.

ASSOCIATION: Astrakhanskiy tekhnicheskiy institut rybnoy promyshlennosti i khozyaystva (Astrakhan Technical Institute of Fishing Industry and Economy)

Card 2/2

CHERKESOV, A.I.

Analytical properties of polynitro-substituted derivatives of  
hydrazobenzene. Trudy kom. anal. khim. 11:137-145 '60.  
(MIRA 13:10)

1. Astrakhanskiy tekhnicheskiy institut rybnoy promyshlennosti  
i khozyaystva.  
(Hydrazobenzene)

LEBEDEV, O.V.; CHERKESOV, A.A.

Transistor stabilizers of regulated low voltage. Prib. i tekhn.  
eksp. 6 no.4:153-154 Jl-Ag '61. (MIRA 14:9)

1. Nauchno-issledovatel'skiy institut radiatsionnoy gigiyeny.  
(Voltage regulators)

2208, 1273, 1140

23595  
S/075/61/016/003/006/007  
B106/B208

55300

AUTHORS: Cherkesov, A. I. and Zhigalkina, T. S.

TITLE: Photometric cerium determination

PERIODICAL: Zhurnal analiticheskoy khimii, v. 16, no. 3, 1961, 364-365

TEXT: One of the authors devised in a previous paper (Ref. 6: Cherkesov A. I., Dokl. na VIII Mendeleyevskom s"yezde po obshchey i prikl. khim. Sektsiya analit. khim. Izd-vo AN SSSR, M., 1958, str. 56) a quick photometric method of determining small cerium quantities without preceding separation of a number of accompanying elements. This method rests upon the redox reaction of tetravalent cerium with the halochromic compound of an azo dye with sulfuric acid. From among several azo dyes studied methyl orange and methyl red proved to be most suitable for this purpose. For the determination methyl orange has to be dissolved in 60%  $H_2SO_4$ , methyl red in 80%  $H_2SO_4$ ; the absorption maxima of these solutions lie at 496  $\mu\mu$  (methyl orange) and 533  $\mu\mu$  (methyl red). Both dyes practically give the same results. The authors give in the present paper an

Card 1/5

23595

S/075/61/016/003/006/007

B106/B208

## Photometric cerium determination

instruction for the determination of small cerium quantities by methyl red. By adding increasing quantities of a salt of tetravalent cerium to the sulfuric acid solution of methyl red the optical density of this solution decreases according to the equation  $D_0 - D_C = KC$  ( $D_0$  - optical density of the solution of the dye without cerium addition;  $D_C$  - optical density of the solution of the dye after addition of  $C \mu\text{g}$  of cerium per ml of the solution;  $K$  - coefficient of proportionality). To draw the calibration curve, 0.0202 g  $\text{Ce}(\text{SO}_4)_2 \cdot 4\text{H}_2\text{O}$  was dissolved in 2 N  $\text{H}_2\text{SO}_4$  to an end volume of 250 ml; 1 ml of this solution contains 28  $\mu\text{g}$  of cerium. To prepare a  $10^{-4} - 3 \cdot 10^{-4}$  M solution of methyl red the dye is dissolved in 80% (by volume) of chemically pure sulfuric acid. If the sulfuric acid contains oxidizable impurities, a 0.05 N  $\text{KMnO}_4$  solution has previously to be added drop by drop until a pink color appears which remains constant for 3-5 sec. To draw the calibration curve, 3 ml each of the dye solution are put into 6 cuvettes. 1 ml of the cerium salt solution is added to the first cuvette, 1.5 ml to the second one, 2 ml to the third one, etc. No cerium salt solution is added to the 6th cuvette. All six cuvettes are then made up to

Card 2/5

23595

S/075/61/016/003/006/007  
B106/B208

## Photometric cerium determination

7 ml with 2 N  $H_2SO_4$ . The solutions are thoroughly mixed, and after 10-15 min the optical densities are measured. Table 1 shows the results obtained on the basis of which the calibration curve may be plotted. To determine the cerium, 3 ml of the dye solution are added to 1 ml of the solution to be examined. The solution is made up to 7 ml with 2 N  $H_2SO_4$ , and thoroughly mixed. The optical density  $D_C$  is measured after 10-15 min. The content C of cerium in  $\mu g$  per ml of the measured solution is determined on the basis of the calibration curve from the difference  $D_o - D_C$  ( $D_o$  being known). The ions  $Ni^{2+}$ ,  $Mn^{2+}$ ,  $Zn^{2+}$ ,  $Cd^{2+}$ ,  $Mg^{2+}$ ,  $Al^{3+}$ ,  $Cr^{3+}$ ,  $MoO_4^{2-}$ ,  $UO_2^{2+}$ ,  $Cu^{2+}$ , and  $Co^{2+}$  in amounts of 1,000  $\mu g$ , and the ions  $Fe^{3+}$ ,  $Cl^-$ , and  $NO_3^-$  in amounts of 50-100  $\mu g$  do not interfere with the determination of 6  $\mu g$  of cerium by the method described (Table 2). [Abstracter's note: Essentially complete translation.] There are 1 figure, 2 tables, and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

Card 3/5

23595

S/075/61/016/003/006/007  
B106/B208

## Photometric cerium determination

ASSOCIATION: Saratovskiy gosudarstvennyy pedagogicheskiy institut  
 (Saratov State Pedagogic Institute). Astrakhanskiy  
 tekhnicheskiy institut rybnoy promyshlennosti i khozyaystva  
 (Astrakhan Technical Institute of Fish Industry and Fishery)

SUBMITTED: August 6, 1960

Table 1: Data for plotting the calibration curve;

Legend: (1) - C in  $\mu\text{g}$  of Ce(IV)/ml.

| $D_0$ | $D_c$ | $D_0 - D_c$ | (1)<br>$C_{\text{Ce}^{IV}}$ |
|-------|-------|-------------|-----------------------------|
| 2,00  | 1,85  | 0,15        | 4                           |
|       | 1,70  | 0,30        | 6                           |
|       | 1,55  | 0,45        | 8                           |
|       | 1,35  | 0,65        | 10                          |
|       | 1,20  | 0,80        | 12                          |

Table 1

Card 4/5

23595

S/075/61/016/003/006/007  
B106/B208

## Photometric cerium determination

Table 2: Determination of 6.0  $\mu\text{g}$  of cerium in the presence of other ions;

Legend: (1) - added  $\text{Me}^{n+}$ ,  $\mu\text{g}$ ; (2) - found  $\text{Ce(IV)}$ ,  $\mu\text{g}$ ; (3) - deviation,  $\mu\text{g}$ ; (4) - per 1,000  $\mu\text{g}$  of each ion; (5) - per 100  $\mu\text{g}$  of each ion.

| (1)<br>Добавлено $\text{Me}^{n+}$ , $\mu\text{г}$   | (2)<br>Найдено $\text{Ce}^{\text{IV}}$ , $\mu\text{г}$ | (3)<br>Разхождение, $\mu\text{г}$               |
|---|--|---|
| $\text{Cu}^{2+}, \text{Co}^{2+}, \text{Ni}^{2+},$<br>$\text{Mg}^{2+}, \text{Mn}^{2+}, \text{Zn}^{2+},$<br>$\text{Cd}^{2+}, \text{Cr}^{3+}, \text{Al}^{3+}$<br>$\text{MoO}_4^{2-}, \text{UO}_2^{2+}$ | 6,5; 5,5; 6,5<br>6,0; 6,2; 6,5<br>6,2; 5,5; 6,0        | 0,5; 0,5; 0,5<br>0,0; 0,2; 0,5<br>0,2; 0,5; 0,0 |
| (4) по 1000 $\mu\text{г}$ каждого:  |  |   |
| (5) по 100 $\mu\text{г}$ каждого  |  |   |

Table 2

Card 5/5

ZHIGALKINA, T.S.; CHERKESOV, A.I.

Titrimetric method for the determination of microgram quantitites of  
vanadium. Zhur. anal. khim. 16 no. 4:505-507 Jl-Ag '61.  
(MIRA 14:7)

1. Saratov Pedagogical Institute and Astrakhan Technical Institute  
of Fish Industry and Economy.  
(Vanadium—Analysis)

CHERKESOV, A.I.; ZHIGALKINA, T.S.

Flourescence determination of beryllium in bronze. Zav. lab.  
27 no.6:658-659 '61. (MIRA 14:6)

1. Saratovskiy pedagogicheskiy institut i Astrakhanskiy  
tekhnicheskiy institut vuzov promyshlennosti i khozyaystva.  
(Beryllium—Analysis) (Bronze)

CHERKESOV, A.I.

Mercurimetric indicators from the azo derivative series of  
8-hydroxyquinoline. Zav. lab. 27 no. 12:1447-1449 '61.  
(MIRA 15:1)

1. Saratovskiy pedagogicheskiy institut.  
(Mercurimetry)

CHERKESOV, A.I.; SEIGALKINA, T.S.

3-oxy-2-naphthoic acid as a colorimetric and fluorescent reagent.  
Trudy Astr. tekhn. inst. ryb. prom. i khoz. no.8:25-49 '62.

Study in the field of the analytical use of halochromism in azo  
dyes. Ibid.:50-73 (MIRA 17:8)

CHERKASSOV, A.I., 1911-1982, MEMBER OF C.I.A. BUREAU, A.S.

Use of glasnost for the propagation of the policy of Gorbachev.  
Truly. Asst. Secy. Inst. Int. Pol. Prom. A.M.R. NO. 31 (1988) (CIA 1988)

CHERKESOV, A.I.; ALEKSANDROVICH-MEL'NIKOVA, A.S.

Complexonometric determination of copper in minerals by the  
metal indicator hematoxylin. Trudy Astr. tekhn. inst. ryb.  
prom. i khoz. no.8:97-103 '62. (MIRA 17:8)

ZHIGAIKOV, T. A.; CHV, R. S.; V. B. BULGAKOV, N. I.

Additional material for determining the program quantity  
of chemicals. Every 4th, 10th, 15th, 20th, 25th, 30th, 35th  
programmes. (SIRIUS 1978)

CHERKESOV, A.I.

Certain problems in the theory of analytical color reactions with organic reagents. Report No.1: Mechanism of the complex-forming reactions of some divalent metal ions with 8-hydroxyquinoline azo derivatives. Zhur.anal.khim. 17 no.1:16-22 Ja-F '62.

(MIRA 15:2)

1. Saratov State Pedagogical Institute.  
(Complex compounds) (Chromatographic analysis)

CHERKESOV, A.I.

Mechanism of reactions associated with the hypsochromic shift  
of some acid-base indicators in alkaline medium. Zhur. fiz.  
khim. 36 no.9:1897-1901 S '62. (MIRA 17:6)

1. Saratovskiy pedagogicheskij institut.

CHERKESOV, A.I.

Mechanism of the complexing reactions between ions of some bivalent metals and 8-hydroxyquinoline azo derivatives.  
Dokl. AN SSSR 142 no.5:1098-1100 F '62. (MIRA 15:2)

1. Saratovskiy gosudarstvennyy pedagogicheskiy institut.  
Predstavлено академиком А.А.Гринбергом.

(Azo compounds)  
(Metals)  
(Quinoline)

CHERKESOV, A.I.

Certain problems in the theory of analytical color reactions  
with organic reagents. Report No.4: Oxidation reaction of  
octamethyltetraminetetraphenylethylene. Zhur. anal. khim. 18  
no.1:24-28 Ja '63. (MIRA 16:4)

1. Saratov State Pedagogical Institute.  
(Metals—Analysis)  
(Oxidation-reduction reaction)  
(Chemical tests and reagents)

CHERKESOV, A.I.; PUSHINOV, Yu.V.

Interaction of stilbene-2,2'-disulfonic acid of 4,4'-bis  
[<1-azo >-4-hydroxybenzene] with ions of certain bivalent  
metals. Zhur. anal. khim. 18 no.11:1392-1393 N '63.

(MIRA 17:1)

1. Saratovskiy gosudarstvennyy pedagogicheskiy institut.

L 14528-65 AFWL/ESD(gs)  
ACCESSION NR: AP5001424

S/0075/64/019/008/0943/0946

B

AUTHOR: Cherkesov, A. I.; Alykov, N. M.

TITLE: Selection of complexometric indicators for scandium from the series  
of azo-derivatives of chromotropic acid

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 8, 1964, 943-946

TOPIC TAGS: volumetric analysis, chromotropic acid, organic azo compound,  
ion, scandium, thorium, lanthanum, uranium

Abstract: In a search for highly sensitive complexometric indicators for  
the titration of scandium ions, as well as ions of thorium, lanthanum,  
uranium, and other elements, 38 azo-derivatives of chromotropic acid were  
synthesized, and their indicator and other properties were compared. The  
formula, wavelength maximum, optimum titration pH, color change, and sensi-  
tivity of the indicator are tabulated for 10 reagents suggested for use for  
the complexometric determination of scandium, some of them synthesized for  
the first time. The indicators were evaluated on the basis of the factors:

Card 1/3

L 14528-65  
ACCESSION NR: AP5001424

sensitivity of reaction, sharpness of transition at the equivalence point, and reproducibility of the results of the titration. Stilbene-2,2'-disulfonic acid-4,4'-bis(azo-2")-1,8-dihydroxynaphthalene-3,6-disulfonic acid<sup>7</sup> was found to be best for the direct complexometric titration of scandium, suitable for the titration of scandium under artificial lighting. Other indicators recommended: 4-aminostilbene-2,2'-disulfonic acid-4-(azo-2)-1,8-dihydroxynaphthalene-3,6-disulfonic acid and naphthalene-6-sulfonic acid-2-(azo)-1,8-dihydroxynaphthalene-3,6-disulfonic acid. These indicators were suitable for titration in acid medium: optimum pH 1.5-2.5 for 0.01 M solutions of scandium (optimum pH 3-5 for naphthalene-6-sulfonic acid-2-(azo)-1,8-dihydroxynaphthalene-3,6-disulfonic acid) and optimum pH 4-5 for 0.001 M solutions. Substantial amounts of alkali and alkaline earth elements, La<sup>+3</sup>, Ce (III), Cr (III), Cd<sup>+2</sup>, Co<sup>+2</sup>, and Ni<sup>+2</sup>, as well as 10-fold amounts of Zr (IV) and Y<sup>+3</sup>, do not interfere with the determination of scandium; large quantities of Zr (IV), Ti (IV), Fe<sup>+3</sup>, and phosphates, tartrates, and citrates interfere with the titration. Orig. art. has: 2 tables.

Card 2/3

L 14528-65  
ACCESSION NR: AP5001424

ASSOCIATION: Saratovskiy gosudarstvennyy pedagogicheskiy institut (Saratov State Pedagogical Institute)

SUBMITTED: 04Nov63 ENCL: 00 SUB CODE: GC,EM

NO REF SOV: 002 OTHER: 001 JPRS

Card 3/3

ACCESSION NR: AP4033412

S/0076/64/038/003/0762/0764

AUTHOR: Cherkesov, A.I.

TITLE: Empirical equation for calculation of  $\lambda_{\max}$  for absorption bands of organic compounds with linear conjugated bonds.

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 3, 1964, 762-764

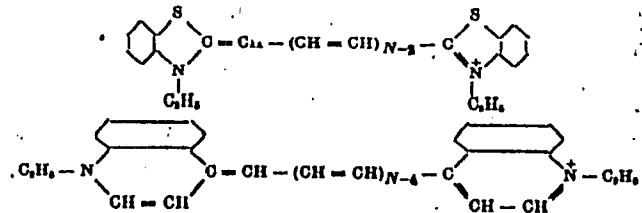
TOPIC TAGS: absorption band, polyene, polyene aldehyde, polyene acid, cyanine diphenoxy polyene, caratinoids, dye polyene dye

ABSTRACT: An empirical equation for the calculation of  $\lambda_{\max}$  of absorption band of organic compounds with linear conjugated bonds which takes into consideration the quenching nature of the increase of  $\lambda_{\max}$  with the increase of the length of the conjugated chain has been proposed. It is noted that for compounds with linear conjugated bonds and unsymmetrical end groups of the polyene aldehydes and polyene acids the following relationship exists:  $\Delta\lambda \approx \text{const}$  or  $\lambda_{n+2} = \lambda_n + \text{const}/n$ , where  $n$  is the number of bonds between the "reacting" atoms or atomic groups and  $\Delta\lambda = \lambda_{n+2} - \lambda_n$ ;  $\lambda_n$  and  $\lambda_{n+2}$  are wavelength maxima of the initial and final members of the homologous series of

Card 1/3

ACCESSION NR: AP4033412

compounds. For compounds with linearly conjugated bonds and with symmetrical end groups of the cyanine, di-phenylpolyene and carotinoid types it is assumed that  $\Delta\lambda(n+n_\infty) \approx \text{const}'$  or  $\lambda_{n+2} - \lambda_n = \text{const}'/(n+n_\infty)$  where  $n_\infty$  is the number of conjugated bonds for the end group of the compounds. Therefore, it is necessary to determine from experimental data the numerical value of const. and const' derived from the first few members of the given series. A correlation of  $\lambda_{max}$  of the absorption band is also given for polyene dyes of the following structure:



It is concluded that the established relationship of  $\lambda_{\max} = f(n)$  expressed in the general form  $\lambda_{\max} = \lambda_0 + \text{const}/n$  or  $\lambda_{\max} = \lambda_n + \text{const}/(n+n_0)$  expresses not only the increase of  $\lambda_{\max}$  with increase of the

## Card

ACCESSION NR: AP4033412

number of bonds n, but also the quenching character of this increase. Orig. art. has: 3 tables

ASSOCIATION: Saratovskiy pedagogicheskiy institut (Saratov Pedagogical Institute)

SUBMITTED: 04Apr63

ENCL: 00

SUB CODE: OC

MR. REF Sov: 002

OTHER: 008

Card 3/3

CHERKESOV, A.I.; ALYKOV, N.M.

Selection of complexometric indicators for scandium from the  
series of azo-substituted derivatives of chromotropic acid.  
Zhur. anal. khim. 19 no.8:943-946 '64.

(MIRA 17:11)

L. Saratovskiy gosudarstvennyy pedagogicheskiy institut.

CHERKESOV, A.I.; ALYKOV, N.M.

Spectrophotometric study of organic reagents for scandium. Zhur. anal. chim. 19 no.9:1067-1072 '64.  
(MIRA 17:10)

1. Saratovskiy gosudarstvennyy pedagogicheskiy institut.